Social Media: Menagerie of Metrics

Lawrence M. Grega © 2010
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Agenda

- Introduction (5 mins)

- Part 1 - The Menagerie of Metrics (15 mins)

- Part 2 - Sandbox Scenario Exercise (15 mins)

- Part 3 - Taming the Beasts (15 mins)

- Questions & Discussion

- Conclusion

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Social Media:
Menagerie of Metrics

PART I

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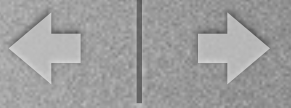
Menagerie Defined

Menagerie From Wikipedia, the free encyclopedia For other uses, see The Menagerie.

The Versailles menagerie during the reign of Louis XIV.

A **menagerie** was a form of keeping calm and exotic animals in human captivity and therefore a predecessor of the modern zoological garden. The term was foremost used in seventeenth century France originally for the management of the household or domestic stock, but later primarily for an aristocratic or royal animal collection. The French-language "Methodical Encyclopaedia" of 1782 defines a menagerie as an "*establishment of luxury and curiosity.*" Later on the term referred also to travelling animal collections that exhibited wild animals at fairs across Europe and the Americas.

Description : Backyard of the royal menagerie of Versailles during the reign of Louis XIV, 1643-1715; Date: Detail scanned 2006-04-17; Source: Coloured copperplate print (Detail); Author Artist: D'Aveline (French artist, late 17th and early 18th century); Permission:(Reusing this file) public domain

http://en.wikipedia.org/wiki/Menagerie

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Analogy: Zoology

- Where the wild things are: "It's a jungle out there!"

- (Animals) "Pythons", "Unbuntus", "Gnu's", "Unix's and Linux's"

- Principles of zoology are appropriate

- Animals & Languages are diverse and evolving

The Social Jungle

- … is fraught with challenges

- Metrics can be elusive & misleading

- A non-perfect science… breeds a new art!

- "We are seeing the merging of QUANTITATIVE and QUALITATIVE research:

- The combination in measurement of *relational meshed volumes* of rich Hard & Tacit data leads to a new "QUANTILATIVE" research methodology

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Menagerie of Metrics

- Vast variation in data types for social media measurement (metadata)

- Structured/Unstructured Data (hard & soft)

- Traffic Analysis (mega-metadata)

- Community engagement "rules" can be ambiguous; but this opens up opportunity for authentic experimentation

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The Old Model

- Standard Sender > Receiver Research

- Fixed & easily controlled communication processes to research

- Venues were easily "trackable"

- Rigid interaction processes

- Measurement was "simple science"

The New Model

- Dynamic Quantum Interactivity

- Everyone is involved at some point in the "conversation" - persistent always on interaction; venues change daily & proliferate; almost everyone has one! Usage will only grow and virate.

- Grega's Postulate for Social Media Interaction Measurement: "The sum of spontaneous interaction *for all* in *union* with simultaneous Media Revolutions multiplied by *incremental* Evolution of the conversation equals *continuous Disruption of Measurement* in *proportion to the* size of the Network"

- "$\sum(i\forall \pm \cup MR) \otimes \Delta(Ec) = \infty DoM \propto (N)$"

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Languages & APIs

- The measurement of "conversations" will require distinct definition & integration of API Languages to enable "conversions"

- The "qualitative" side of the conversation must be a denominator in the analysis

- GOAL: *Target audiences* with conversation but ... *Engage individuals* for propensity & "self conversion"

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Social Media:
Sandbox Scenario Exercise

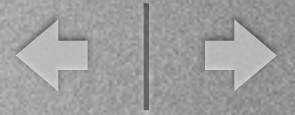## PART 2

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Step 1 - Sandbox Scenario Exercise

- Break into Groups > Identify one member as "recorder" who will write short description in **BLACK** of each "tool" or measurement technology" on a sticky. **We are going to scenario plan with these technologies**

- *Google Search*: Social Media Measurement: *Use the web internet, social tools, search, discussions, opinions to find subjects to place along the timeline*

- Write down on stickies all measurement tools, languages, methods, technologies you find, or feel via group consensus, that you can use to measure Social Interaction in a concrete way

- Make/place the stickies for each "tool or technology" you feel will be the dominant players and work forward towards the year 2025 placing them along an imaginary timeline... will they last? Why or why not? Record your comments

- What might your group predict will happen by 2025 to social networking? Make a comment of each technology/tool/language/media

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Step 2 - Sandbox Scenario Exercise

- Once you have your "tools/technologies" identified, place the stickies along the timeline estimating where you think they will make the most impact on the future of social networking by year 2025 and record why on another sticky (Work Forward)

- Scenario Planning > Make stickies describing "events" that could cause disruption to these technologies and place them along the timeline (color code the "events" as BLUE = positive event or RED = negative event) ...Work Forward in time again!

- After 10-15 minutes, and these steps are complete, choose the absolute worst negative "event" and the best "tool/technology" you identified. Make a copy of those stickies and hand them to the group to your right.

- Now **work backwards** and consider any impact to your scenarios; re-arrange your scenario timelines appropriately. How does this change the outcome in 2025? Legibly record comments on stickies in BLACK.

- Choose one person to represent your group's overall findings. Presenter will record each group's results photos/comments & include in presentation
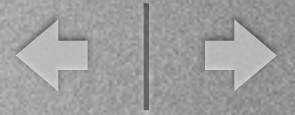
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Step 3 - Sandbox Scenario Exercise Results

- Group 1 - (Presenter should record comments of scenarios & timelines and place here for group participants to refer to in future.)

Step 3 - Sandbox Scenario Exercise Results

- Group 1 - (Presenter should record photos of scenarios & timelines sticky notes/graphics and post here.)

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Step 3 - Sandbox Scenario Exercise Results

- **Group 2** - (Presenter should record comments of scenarios & timelines and place here for group participants to refer to in future.)

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Step 3 - Sandbox Scenario Exercise Results

- **Group 2** - (Presenter should record photos of scenarios & timelines sticky notes/graphics and post here.)

Social Media Measurement Search Results

- Software & Programs?

- Vendors?

- Mashups?

- Search Analytics?

- Marketing Branding?

- APIs?

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Social Media:
Taming The Beasts

PART 3

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Social Media Factoring

- Communities "own" the conversation with a duality of interaction - double edged sword

- Modeling is "moot" at some point - or is it? "fluid dynamics"

- Security is paramount to protect systems

- *Quantity is a volume function of Quality*: QN∰(QL)

- Ultimately, the goal of Quantitative research is to improve Qualitative Factors

- Combined "*meshed data volumes*" reflect "*rich interaction*" *integration & analysis*

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Duality of the Media

- Network & Individuals

- Ventilation & Magnification

- Waves & Pulse

- Engagement & Risk

- Relationship & Speed

- Buzz & Hype

- Flame & Retaliation

- Open & Closed

- Volatility & ... Unpredictability (Exciting!)

- Flow & Tactics

- Opt In & Selection

- 1st Amendment Multiplier

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Tacit Interactions

- Sentiment or Attitudes - "affective/emotive"

- User Preferences - "N" fluctuations/valuations

- Opinion & Rating Valuations

- Traffic analysis - "soft" metadata granularity

- Trendspotting vs Trendmaking opportunity

- APIs & IAPs (Interface Agreement Proposals)

SPIDURZ Method - © L.M.Grega 2010

- **Sort** - media venues, internal actors, measurement tools

- **Prune & Prioritize** - vectors, channels, purpose

- **Interaction** - use community guidelines

- **Define** - direction, crisis management, security

- **Unify** - message to the community, and technology

- **Reach** - extend viral reach, rhythm & responsibility

- **Zoo Strategy** - sense/tame/move in web of interaction

Zoology Analogy

- **Immersion Exhibits -** barriers are hidden to simulate observation in a natural environment (security is present but not noticed)

- **Un-natural environment -** Asymmetricity & Ambiguity is the daily norm in a jungle (adaptation is harder when re-introduced to jungle) "Captivity is unnatural!"

- **Nocturnal House -** dark in day & light at night; reversal to aid research ("predators come out") ...Think Security!

- **Captive Breeding -** migratory birds/fish fail when bred out of natural surroundings e.g. "PTSD" or "Veterans can't get jobs": *when returning to society can Social Networking may be able to help these communities*

- **Cloning -** 22 Animals were cloned to date; genetic algorithms can help prediction (e.g. "elitism" - attempts to ensure selection by including performers in survival)

- **Behavioral enrichment -** 6 groups of stimuli to enrich their environment in captivity; puzzles are used to enrich the environment and add value

Behavioral Enrichment

- **Types of enrichment**

Any novel stimulus which evokes an animal's interest can be considered enriching, including natural and artificial objects, scents, novel foods, and different methods of preparing foods (for example, frozen in ice). Most enrichment stimulus can be divided into six groups:

- **Sensory**, this category stimulates animals' senses: visual, olfactory, auditory, tactile, and taste.
- **Feeding**, this is how keepers make feeding time fun and challenging. Different methods of food presentation encourage animals to think and work for their food as they would in the wild.
- **Manipulative Toys**, these are items that can be manipulated in some way via hands, feet, tail, horns, head, mouth etc. simply for investigation and exploratory play.
- **Environmental**, this category enables the keeper to enhance the animals' zoo habitat with opportunities that change or add complexity to the environment.
- **Social**, the opportunities to interact with other animals.
- **Training**, training animals with positive reinforcement.

Puzzles that require an animal to solve simple problems in order to access food or other rewards are considered enrichment. Additionally food collecting and/or gathering contributes to behavioral enrichment and provides occupation. Quite elaborate systems of food presentation (dead rats) have been developed (e.g. in Switzerland for wild cats), where computer programmed various mechanic devices allow the animals in the enclosure to search for prey as in their natural environment. An animal's environment may also be enriched by the presence of other animals of the same or different species. A stimulus can be considered enriching even if the animal's reaction to it is negative, such as with unpleasant scents, although stimuli that evoke extreme stress or fear should be avoided, as well as stimuli that can be harmful to the animal. Enrichment can also be auditory which may include animal sounds and music.

http://en.wikipedia.org/wiki/Behavioral_enrichment

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Evolutionary Algorithm

- Evolutionary algorithm From Wikipedia, the free encyclopedia

Artificial intelligence portal

In artificial intelligence, an **evolutionary algorithm** (EA) is a subset of evolutionary computation, a generic population-based metaheuristic optimization algorithm. An EA uses some mechanisms inspired by biological evolution: reproduction, mutation, recombination, and selection. Candidate solutions to the optimization problem play the role of individuals in a population, and the fitness function determines the environment within which the solutions "live" (see also cost function). Evolution of the population then takes place after the repeated application of the above operators. *Artificial evolution* (AE) describes a process involving individual *evolutionary algorithm*s; EAs are individual components that participate in an AE.

Evolutionary algorithms often perform well approximating solutions to all types of problems because they ideally do not make any assumption about the underlying fitness landscape; this generality is shown by successes in fields as diverse as engineering, art, biology, economics, marketing, genetics, operations research, robotics, social sciences, physics, politics and chemistry[*citation needed*].

http://en.wikipedia.org/wiki/Evolutionary_algorithm

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Operations Research

- **Operations research** From Wikipedia, the free encyclopedia

It has been suggested that *Management science* be merged into this article or section. (Discuss)

Operations research (OR), as termed in the United States, Canada, South Africa and Australia, and **operational research**, as termed in Europe, is an interdisciplinary branch of applied mathematics and formal science that uses methods such as mathematical modeling, statistics, and algorithms to arrive at optimal or near optimal solutions to complex problems. It is typically concerned with determining the maxima (of profit, assembly line performance, crop yield, bandwidth, etc) or minima (of loss, risk, etc.) of some objective function. Operations research helps management achieve its goals using scientific methods.[1][2] Originating in military efforts before World War II, its techniques have grown to concern problems in a variety of industries.[3]

Model of Operation research study, based on Stafford Beer (1959).[4]

Contents [hide]

Overview

Operations research encompasses a wide range of problem-solving techniques and methods applied in the pursuit of improved decision-making and efficiency.[5] Some of the primary tools used by operations researchers are statistics, optimization, probability theory, queuing theory, game theory, graph theory, decision analysis, mathematical modeling and simulation. Because of the computational nature of these fields, OR also has ties to computer science, and operations researchers use both custom-written and off-the-shelf software.

Operations research is distinguished by its frequent use to examine an entire management information system, rather than concentrating only on specific elements (though this is often done as well). An operations researcher faced with a new problem is expected to determine which techniques are most appropriate given the nature of the system, the goals for improvement, and constraints on time and computing power.

[edit]

http://en.wikipedia.org/wiki/Operations_research

Conclusion:
Questions & Discussion

PART 3

Conclusion

- Zoology: a great metaphor for social media measurement & roots of operational research

- Implications for Integrated Scenario Planning and Societal Engagement with Social Media

- <u>Grega's Postulate for Social Media Interaction Measurement</u>: "The sum of spontaneous interaction *for all* in *union* with simultaneous Media Revolutions multiplied by *incremental* Evolutions of the conversation equals *continuous Disruption of Measurement in proportion to the* size of the Network" $\sum(i\forall \pm \cup MR) \otimes \Delta(Ec) = \infty DoM_\propto(N)$ L.M. Grega © 2010

- "Quantilative" Research = Relational "meshed volume" data analysis: $QN_{\!f\!f\!f}(QL)$ Quantity is a function of Quality L.M. Grega © 2009

- SPIDURZ Methodology - L.M. Grega © 2010

DoD & Interagency Implications

- Military Principles Apply

- Infiltration/Exfiltration

- Extraction/Sensing

- Profiling/Screening

- Support/Echelons

- Lines of Communication

- Joint Operations

- Close & Deep Battle

- Synchro-Integration

- Full Spectrum Operations

- Decisionmaking Process

- Employment/Deployment

- Civil-Military Operations

- Embarkation/Dissemination

- Perimeter Security (Inside & Outside Firewall Operations)

- "All the Way" Participation

- Hearts & Minds

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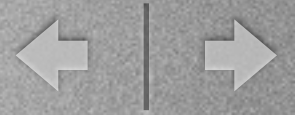
DoD Challenges:

- Non-Concurrence of senior leaders to engage <u>for the long haul</u> in social media (Marines)

- DoD concerns over OPSEC and limitations in individual involvement outside military

- Senior leadership's fear of engaging in a "public maneuver space" with hands off control

- Difficulty in defining/enforcing proper engagement training for servicemen/women

- Interagency transparency and security initiatives (Will "the silos" reign supreme again?)

- Loss of ability to control the conversation, and/or the maintenance of crisis cleanup

- How can you leverage the social-sphere to contribute to our military prowess as a pubic communication feedback mechanism? Maybe the military can cut off a chunk of wireless bandwidth that will be publicly available instead of shutting cell phones off in a crisis. (Think 9/11- But bandwidth could be an issue.)

- How can social media help alleviate suicide rates? (Grega's "ventilation" suggestions)

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DoD Challenges:

- Congress must "modernize" the financial flow to affect recruiting. The current system is not flexible enough to allow "proactive reaction" to social movements. (Old system)

- If it is "truly" an all volunteer force, then why do we have/need recruiters? There needs to be an effort to build/test a system that can automate the accessions process via Artificial Intelligence as a pre-screening process. This is a financial process improvement that the technology we have today can accomplish and guide accessions experimentation.

- IF we keep recruiters, then we must aim to create systems that pre-screen an applicant so accurately, that any leads given to a recruiter are so propensed so as to elicit inquiry such as "How could you lose that prospect as they were propensed to a 95% Confidence level?" This automated process improvement has to be executed as early in the student's education level as possible in the accessions probing placement. (The peer pressure starts early.)

- Recruiting in a world where the future servicemen/women expect to have access (The danger of appearing "out of touch" to the digital natives is a turn off to them)

- Why/should there be an Army, Navy Marines, Air Force, Guard? Why not just DoD Forces? Why should tradition limit our concept of true monumental change for American Forces? (Retention)

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DoD Challenges:

- The government military may need to re-consider how it presents physical versus physical capability to the general public. A well rounded recruit needs to have the "patriotic heart/spirit" first... the rest is secondary. Do not discourage, and be careful of the message you send the public (elitism vs aspiration). This flirts with the ideologies that spawned WW2. All of America's children must be encouraged to know they are "good enough". We accept you as you are now!

- Have we forgotten about "the power of retention"? Why do we not re-look how the military can partner with other government agencies to retain military personnel in continued service at both state and national level. A direct program This is a great venue where the civilian agencies to create a may be a great place for former military to find fresh perspectives.

- Emergencies are great opportunities for recruiting. People have a patriotic mindset to keep the country strong. We need to capitalize on these situations as they arise. Why can we not have a special policy for an accelerated recruiting process that allows the Reserves and especially the State Governors to quickly access and contract citizens in a time of crisis? DoD could have an automated pre-screening technology that can assist with this. The key being the security clearance process needs to be fast/thorough, but not so prohibitive so as to bog down progress.

Thank You for your open sourced minds!

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Sources

- www.wikipedia.org & Google Search

- https://networkchallenge.darpa.mil/Default.aspx

- http://news.cnet.com/8301-17938_105-10410064-1.htm

- Military Decision Making Process/Scenario Planning

- **Personal Notes/Research below - Lawrence M. Grega © 2010 All Rights Reserved**

- Grega's Postulate for Social Media Interaction Measurement: "The sum of spontaneous interaction *for all* in *union* with simultaneous Media Revolutions multiplied by *incremental Evolutions of the conversation* equals *continuous Disruption of Measurement in proportion to the* size of the Network" $\sum(i\forall \pm \cup MR) \otimes \Delta(Ec) = \infty DoM_\infty(N)$ L.M. Grega © 2010

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